EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	10/719311	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/06/15 11:26
S2	18	Chiorini John	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:18
S3	21	AAV4.clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:24
S4	12	Safer Brian	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:22
S5	26	Kotin Robert	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:21
S6	32	S2 S4 S5	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/06/15 11:21
S7	8	S6 and S3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/06/15 11:21
S8	18	Chiorini John	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:22
S9	96	AAV4	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:24
S10	9	S9 and zhang	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:25
S11	2	("6194191").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2006/06/15 11:26
S12	14214	adeno-associated virus	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:27
S15	4068	S12 and (Rep OR capsid)	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:28

EAST Search History

S17	428	S12 and (Rep capsid ITR)	US-PGPUB; USPAT; EPO; JPO; DERWENT	SAME	ON	2006/06/15 11:36
S18	114	S17 and (AAV2 AAV3 AAV4 AAV5)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/06/15 11:56
S19	298	Johnson Philip	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:56
S20	18	S19 and S12	US-PGPUB; USPAT; EPO; JPO; DERWENT	NEAR	ON	2006/06/15 11:56

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(FILE 'HOME' ENTERED AT 16:32:20 ON 22 JUN 2006)

FILE 'MEDLINE, SCISEARCH, CAPLUS, BIOSIS' ENTERED AT 16:34:35 ON 22 JUN 2006

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L1           89 S AAV4 OR (ADENO? VIRUS TYPE 4)
L2           34 DUP REM L1 (55 DUPLICATES REMOVED)
L3            5 S L2 AND PY<=1997
L4            5 SORT L3 PY
L5           17 S L2 AND (REP OR CAP? OR ITR?)
L6           17 FOCUS L5 1-
                E CHIORINI JOHN?/AU
L7          125 S E1
                E SAFER BRAIN?/AU
L8          372 S E1
                E KOTIN ROBERT?/AU
L9          114 S E1
L10         574 S L7 OR L8 OR L9
L11          29 S L10 AND L1
L12          13 DUP REM L11 (16 DUPLICATES REMOVED)
```

=> d ti so au ab pi 16 1 4 6 9

L6 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2006 ACS on STN

TI Adeno-associated virus 4 genome sequence and uses as a genetic vector

SO PCT Int. Appl., 80 pp.
CODEN: PIXXD2

IN Chiorini, John A.; Kotin, Robert M.; Safer, Brian

AB The present invention provides an adeno-associated virus 4 (**AAV4**) virus and vectors and particles derived therefrom. To understand the nature of **AAV4** virus and to determine its usefulness as a vector for gene transfer, it was cloned and sequenced. **AAV4** is a distinct virus based on sequence anal. phys. properties of the virion, hemagglutination activity, and tissue tropism. The sequence data indicates that **AAV4** is a distinct virus from that of AAV2. In contrast to original reports, **AAV4** contains 2 open reading frames which code for either **Rep** proteins or **capsid** proteins. **AAV4** contains addnl. sequence upstream of the p5 promoter which may affect promoter activity, packaging, or particle stability. Furthermore, **AAV4** contains an expanded **Rep** binding site in its **ITR** which could alter its activity as an origin of replication or promoter. In contrast to previous reports **AAV4** is able to transduce human as well as monkey cells. The inverted terminal repeats may be used to construct vectors containing a promoter and heterologous gene.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9811244	A2	19980319	WO 1997-US16266	19970911
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2265460	AA	19980319	CA 1997-2265460	19970911
AU 9746456	A1	19980402	AU 1997-46456	19970911
EP 932694	A2	19990804	EP 1997-945204	19970911
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 2003215422	A1	20031120	US 1999-254747	19991126
AU 771545	B2	20040325	AU 2001-97210	20011212

AU 2001097210 A5 20020207
US 2004086490 A1 20040506 US 2003-719311 20031120

L6 ANSWER 4 OF 17 MEDLINE on STN
TI Cloning of adeno-associated virus type 4 (**AAV4**) and generation of recombinant **AAV4** particles.
SO Journal of virology, (1997 Sep) Vol. 71, No. 9, pp. 6823-33. Journal code: 0113724. ISSN: 0022-538X.
AU Chiorini J A; Yang L; Liu Y; Safer B; Kotin R M
AB We have cloned and characterized the full-length genome of adeno-associated virus type 4 (**AAV4**). The genome of **AAV4** is 4,767 nucleotides in length and contains an expanded p5 promoter region compared to AAV2 and AAV3. Within the inverted terminal repeat (**ITR**), several base changes were identified with respect to AAV2. However, these changes did not affect the ability of this region to fold into a hairpin structure. Within the **ITR**, the terminal resolution site and **Rep** binding sites were conserved; however, the **Rep** binding site was expanded from three GAGC repeats to four. The **Rep** gene product of **AAV4** shows greater than 90% homology to the **Rep** products of serotypes 2 and 3, with none of the changes occurring in regions which had previously been shown to affect the known functions of Rep68 or Rep78. Most of the differences in the **capsid** proteins lie in regions which are thought to be on the exterior surface of the viral **capsid**. It is these unique regions which are most likely to be responsible for the lack of cross-reacting antibodies and the altered tissue tropism compared to AAV2. The results of our studies, performed with a recombinant version of **AAV4** carrying a lacZ reporter gene, suggest that **AAV4** can transduce human, monkey, and rat cells. Furthermore, comparison of transduction efficiencies in a number of cell lines, competition cotransduction experiments, and the effect of trypsin on transduction efficiency all suggest that the cellular receptor for **AAV4** is distinct from that of AAV2.

L6 ANSWER 6 OF 17 MEDLINE on STN
TI Structure of adeno-associated virus type 4.
SO Journal of virology, (2005 Apr) Vol. 79, No. 8, pp. 5047-58. Journal code: 0113724. ISSN: 0022-538X.
AU Padron Eric; Bowman Valorie; Kaludov Nikola; Govindasamy Lakshmanan; Levy Hazel; Nick Phillip; McKenna Robert; Muzyczka Nicholas; Chiorini John A; Baker Timothy S; Agbandje-McKenna Mavis
AB Adeno-associated virus (AAV) is a member of the Parvoviridae, belonging to the Dependovirus genus. Currently, several distinct isolates of AAV are in development for use in human gene therapy applications due to their ability to transduce different target cells. The need to manipulate AAV **capsids** for specific tissue delivery has generated interest in understanding their **capsid** structures. The structure of AAV type 4 (**AAV4**), one of the most antigenically distinct serotypes, was determined to 13-A resolution by cryo-electron microscopy and image reconstruction. A pseudoatomic model was built for the **AAV4** **capsid** by use of a structure-based sequence alignment of its major **capsid** protein, VP3, with that of AAV2, to which **AAV4** is 58% identical and constrained by its reconstructed density envelope. The model showed variations in the surface loops that may account for the differences in receptor binding and antigenicity between AAV2 and **AAV4**. The **AAV4** **capsid** surface topology also shows an unpredicted structural similarity to that of Aleutian mink disease virus and human parvovirus B19, autonomous members of the genus, despite limited sequence homology.

L6 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2006 ACS on STN
TI Recombinant adeno-associated virus type 2, 4, and 5 vectors: transduction of variant cell types and regions in the mammalian central nervous system
SO Proceedings of the National Academy of Sciences of the United States of

America (2000), 97(7), 3428-3432
CODEN: PNASA6; ISSN: 0027-8424
AU Davidson, Beverly L.; Stein, Colleen S.; Heth, Jason A.; Martins, Ines; Kotin, Robert M.; Derksen, Todd A.; Zabner, Joseph; Ghodsi, Abdi; Chiorini, John A.
AB Recombinant adeno-associated virus vectors based on serotype 2 (rAAV2) can direct transgene expression in the central nervous system (CNS), but it is not known how other rAAV serotypes perform as CNS gene transfer vectors. Serotypes 4 and 5 are distinct from rAAV2 and from each other in their **capsid** regions, suggesting that they may direct binding and entry into different cell types. In this study, we examined the tropisms and transduction efficiencies of β-galactosidase-encoding vectors made from rAAV4 and rAAV5 compared with similarly designed rAAV2-based vectors. Injection of rAAV5 β-galactosidase (βgal) or rAAV4βgal into the lateral ventricle resulted in stable transduction of ependymal cells, with approx. 10-fold more pos. cells than in mice injected with rAAV2βgal. Major differences between the three vectors were revealed upon striatal injections. Intrastriatal injection of rAAV4βgal resulted again in striking ependyma-specific expression of transgene, with a notable absence of transduced cells in the parenchyma. RAAV2βgal and rAAV5βgal intrastriatal injections led to β-gal-pos. parenchymal cells, but, unlike rAAV2βgal, rAAV5βgal transduced both neurons and astrocytes. The number of transgene-pos. cells in rAAV5βgal-injected brains was 130 and 5,000 times higher than in rAAV2βgal-injected brains at 3 and 15 wk, resp. Moreover, transgene-pos. cells were widely dispersed throughout the injected hemisphere in rAAV5βgal-transduced animals. Together, our data provide in vivo support for earlier in vitro work, suggesting that rAAV4 and rAAV5 gain cell entry by means of receptors distinct from rAAV2. These differences could be exploited to improve gene therapy for CNS disorders.

Kaushal, Sumesh

To: STIC-Biotech/ChemLib
Subject: 10719311: SEQ search

10719311: SEQ search

Please search

	SIZE
• SEQ ID NO: 6	125nt
• SEQ ID NO: 20	129nt
• DNA encoding SEQ ID NO:2	623aa
• DNA encoding SEQ ID NO:8	313aa
• DNA encoding SEQ ID NO:9	399aa
• DNA encoding SEQ ID NO:10	537aa
• DNA encoding SEQ ID NO:11	623aa
• DNA encoding SEQ ID NO:4	734aa
• DNA encoding SEQ ID NO:16	598aa
• DNA encoding SEQ ID NO:18	544aa

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